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Claim Rejections Under 35 USC §103

Claims 1-18 are rejected under 35 USC §103(a) as being unpatentable over Huang et al '750. While it is acknowledged that Huang et al does not disclose forming the electrode in a rectangular shape, it is contended that the purpose of the present invention is the same as that of Huang et al to prevent the short circuits between the electrode.

The rejection of claims 1-18 under 35 USC §103(a) based on Huang et al is respectfully traversed.

Independent claims 1 and 11, in their newly amended form, recite:

"said electrode formed in a rectangular-shaped, corrugated configuration along said boundary with each one of two legs of a corrugation connected to only one IC package substrate" (Claim 1)

"an electrode having a rectangular-shaped, corrugated configuration with each one of two legs of a corrugation connected to only one IC package substrate." (Claim 11)

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The Applicants respectfully submit that Huang et al, as shown in Fig. 3, teaches a zig-zag, triangular shaped plating bus wherein each zig-zag has three legs with each one of the three legs connected to at least two oppositely positioned IC package. Huang et al therefore does not teach an electrode that is formed in a rectangular shape, corrugated configuration with each one of two legs of a corrugation connect to only one IC package substrate.

The present invention structure defined by the newly amended independent claims 1 and 11 is therefore patentably distinct from that taught by Huang et al.

The rejection of claims 1-18 under 35 USC §103(a) based on Huang et al is respectfully traversed. A reconsideration for allowance of these claims is respectfully requested of the Examiner.

Claims 1-18 are rejected under 35 USC §103(a) as being unpatentable over Chiu et al '678. It is contended that Chiu et al discloses a matrix form semiconductor package substrate that has an electrode situated in-between a plurality of integrated circuit package substrates for providing electrical communication to

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conductive pads situated on the substrate including an electrode that is formed in a serpentine configuration along the boundary.

The rejection of claims 1-18 under 35 USC §103(a) based on Chiu et al is respectfully traversed.

Chiu et al discloses a wrap-around interconnect for fine pitch ball grid array including a multiplicity of cylindrical vias 62 that are positioned along cutting lines 46a,46b. After separation, a substrate 42 that has semi-circular vias 62 that have openings 64 created by separating through the cylindrical vias 62 that are positioned along the cutting lines is produced. The Applicants respectfully submit that, prior to separation, as narrowly recited in the present invention independent claims 1 and 11. The alleged electrode of Chiu et al is actually a multiplicity of interconnect vias of cylindrical shape. The interconnect vias of Chiu et al are therefore not an electrode formed in a corrugated configuration.

Moreover, the amended independent claims 1 and 11 of the present invention further recites:



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"said electrode formed in a corrugated configuration with each one of two legs of a corrugation connected to only one IC package substrate".

The Applicants respectfully submit that such is not taught, disclosed or suggested by Chiu et al.

The rejection of claims 1-18 under 35 USC §103(a) based on Chiu et al is respectfully traversed. A reconsideration for allowance of these claims is respectfully requested of the Examiner.

Based on the foregoing, the Applicants respectfully submit that all of the pending claims, i.e. claims 1-8 and 10-18, are now in condition for allowance. Such favorable action by the Examiner at an early date is respectfully solicited.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "Version With Markings To Show Changes Made".

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In the event that the present invention is not in a condition for allowance for any other reasons, the Examiner is respectfully invited to call the Applicants' representative at his Bloomfield Hills, Michigan office at (248) 540-4040 such that necessary action may be taken to place the application in a condition for allowance.

Respectfully submitted,



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multiplicity of conductive pads and for providing insulation between said multiplicity of conductive pads after said plurality of IC packages are cut along said boundary through said electrode.

Claim 11 has been amended as follows:

11. (Twice Amended) A ball grid array (BGA) package substrate comprising:

an insulating substrate having a top surface;

a plurality of BGA package substrates formed on said top surface of said insulating substrate;

a multiplicity of conductive traces emanating from each one of said plurality of BGA package substrates, each of said multiplicity of conductive traces provides electrical communication between a conductive pad and a wirebond finger situated on [a BGA package] said BGA package substrate; and

an electrode having a rectangular-shaped, [serpentine] corrugated configuration [electrically connected to said multiplicity of conductive traces] with each one of two legs of a corrugation connected to only one IC package substrate.

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In The Claims

Claim 9 has been cancelled without prejudice.

Claim 1 has been amended as follows:

1. (Twice Amended) A matrix form semiconductor package substrate having an electrode situated in-between a plurality of integrated circuit (IC) package substrates for providing electrical communication to conductive pads situated on [the substrate] said IC package substrates comprising:

[a] said plurality of IC package substrates integrally formed on a substrate strip in a matrix form having a boundary between each two of said plurality of IC package substrates, each of said plurality of IC package substrates having a multiplicity of conductive pads; and

[an] said electrode formed in a rectangular-shaped, [serpentine] corrugated configuration along said boundary with each one of two legs of a corrugation connected to only one IC package substrate for providing electrical communication to said

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